REMARKS

The Office Action dated April 4, 2006, has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 1-13 and 24-28 are submitted for consideration.

Claims 1, 25 and 27 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,711,143 to Balazinski. The rejection is traversed as being based on a reference that neither teaches nor suggests the novel combination of features clearly recited in independent claim 1, 25 and 27.

Claim 1, upon which claims 2-13 depend, recites a method of communicating data between a Base Station System (BSS) and a Serving GPRS Support Node (SGSN). The method includes the step of providing protocol data and associated functions, including encapsulating a data packet with a User Datagram Protocol (UDP) and a Internet Protocol (IP). The UDP includes a UDP port associated with a Network Service Virtual Connection (NS-VC), and the IP provides an IP address associated with a Network Service Entity (NSE). The method also includes the step of transmitting the data packet provided with the protocol data.

Claim 25 recites a Base Station System for communicating data with a Serving GPRS Support Node, the Base Station System includes means for providing protocol data and associated functions, including encapsulating a data packet with a User Datagram Protocol (UDP) and a Internet Protocol (IP), wherein the UDP includes a UDP port

associated with a Network Service Virtual Connection (NS-VC) and, the IP provides an IP address associated with a Network Service Entity (NSE); and transmitting the data packet provided with the protocol data.

Claim 27 recites a Serving GPRS Support Node for communicating data with a Base Station System, the Serving GPRS Support Node includes means for providing protocol data and associated functions, including encapsulating a data packet with a User Datagram Protocol (UDP) and a Internet Protocol (IP), wherein the UDP includes a UDP port associated with a Network Service Virtual Connection (NS-VC) and, the IP provides an IP address associated with a Network Service Entity (NSE); and transmitting the data packet provided with the protocol data.

As outlined below, Applicant submits that the cited reference of Balazinski does not teach or suggest the elements of claim 1.

Balazinski teaches a method of converting a Gb interface to IP while continuing to support Frame Relay and without adversely affecting the interface's performance. Col. 3, lines 19-21. Instead of encapsulating Frame Relay information in IP packets, Balazinski modifies the lower NS sub-layer. Col. 3, lines 21-24. Balazinski includes a Base Station System (BSS) and a Serving GPRS Support Node (SGSN) both of which use a protocol stack including a physical layer, a network service (NS) layer including a NS-Sub-Network Service (NS-NSS) layer and a NS-Sub-Network Control (NS-NSC) layer, and Base Station System GPRS Protocol (BSSGP) layer. Col. 3, lines 27-40. The primary function of the BSSGP layer is to provide radio-related QoS, and routing information that

is required to transmit user data between a BSS and an SGSN. Col. 3, lines 41-45. On the BSSGP layer, there are a Point-to-Point (PTP) functional entity, a Point-to-Multipoint (PTM) functional entity and a signaling (SIG) functional entity. Col. 3, lines 64-67. The existing NS layer adapts the BSS to the Frame Relay protocol and the main function of the NS layer is to provide transportation for BSSGP Virtual Circuits (BVC) over a Frame Relay network. Col. 4, lines 15-18. The primary functions of the existing NS-NSC sub-layer are transmission of NS Service data units (SDU), load sharing between different NS virtual circuits and NS virtual circuit management. The primary functions of the existing NS-SNS layer are providing access to the Frame Relay network or the NSE peer identity by means of a Network Service-Virtual Link (NS-VL), providing NS virtual circuits between peer NSEs, transferring NS SDUs in sequence order on each NS virtual circuit unless order is not require and indicating to the upper layer the availability/unavailability of an NS virtual circuit. Col. 4, lines 42-67. Applicants note that the above disclosure of Balazinski is related to the prior art, i.e., existing Frame Relay based Gb interface.

Balazinski further teaches the IP-based Gb' interface where the protocol stack includes a physical layer, a link layer an Internet Protocol (IP) Layer, a User Datagram Protocol (UDP) layer, a modified NS layer that is divided into an NS-SNS layer and an NS-NDC layer and the BSSGP layer which is unchanged from the existing protocol stack. Col. 5, lines 1-6.

Balazinski transports information from the SGSN functional entities to the BSS functional entities and instead of using Frame Relay virtual circuits, uses IP packets

following multiple routes between end points over a connectionless IP network. The modified Gb interface uses a USP layer over an IP layer. One UDP port is reserved in order to make the modified NS layer and the BSSGP layer act as an application over the IP stack. Col. 5, lines 14-48.

Applicants submit that Balazinski simply does not teach or suggest each of the elements recited in claims 1, 25 and 27. Each of claims 1, 25 and 27, in part, recites encapsulating a data packet with a UDP and IP, wherein the UDP comprises a UDP port associated with a Network Service-Virtual Connection and the IP provides an IP address associated with a Network Service Entity. According to the Office Action, Balazinski teaches encapsulating a data packet with a UDP and IP, wherein the UDP comprises a UDP port associated with a Network Service-Virtual Connection and the IP provides an IP address associated with a Network Service Entity as recited in claims 1, 25 and 27. Specifically, the Office Action cites figure 4 of Balazinski as teaching encapsulating a data packet with a UDP and IP. While figure 4 of Balazinski does show that a packet data unit **includes** an IP header and a UDP header, there is no teaching or suggestion in Balazinski that the UDP header in the **packet data unit** includes a UDP port associated with a Network Service-Virtual Connection and the IP header provides an IP address associated with a Network Service Entity as recited in claims 1, 25 and 27.

Furthermore, Page 5, lines 45-47 of Balazinski discloses that BVCI and NSEI are carried over a single UDP port. As is known to those skilled in the art, this is analogous to having a UDP port of standard applications, such as FTP, TCP etc. Thus, in

Balazinski, one known UDP port is assigned to an application. In the present invention, on the other hand, multiple UDP ports are used to identify NS-VCs and an IP address to identify the Physical NSE unit. When multiple UDP ports are used, as disclosed in the present invention, a standard UDP port is not used, as disclosed in Balazinski. Hence, in the present invention, the UDP ports are not reserved for any application. Balazinski teaches that a single UDP port is configured to transfer BSSGP packets. Thus, one skilled in the art would assume that Balazinski has to use the actual NSEI and BVCI identities used in the frame relay based standard to identify the different NC-VC connections. This mechanism is quite different from the present invention that does not use the BVCI and NSEI address formats but only uses the UDP ports and IP address as recited in the claims.

Balazinski proposes one UDP port and one IP address per NSEI and discusses the option of using UDP port per each BVCI. The present invention, on the other hand, discloses and recites that a UDP port (such as, a source and destination UDP port) is associated with NS-VC and IP address (such as, a source and destination IP address) is associated with NSE. Thus, Applicants submit that while Balazinski clearly proposes a solution which does not allow for using multiple NS-VCs per NSE but uses a single logical connection identified by one UDP port; the present invention, on the other hand, discloses having multiple NS-VCs per NSE, applied with UDP/IP by using different UDP ports to differentiate the NS-VCs.

In the Response to Arguments section, the Office Action alleges that Col. 4, line 63, Col. 5, lines 46-47 of Balazinski discloses that a NS virtual circuit NS-VC is associated with NSE whereas NSEI, which identifies NSE, is associated with UDP port. Therefore, according to the Office Action, NS-VC is associated / related with a UDP port via NSEI. The Office Action further alleges that Col. 4, lines 24-26, Col. 7, lines 43-45 of Balazinski discloses that the SGSN keeps a relationship between NSEI and IP address and NSEI identifies NSE. Thus, according to the Office Action, NSE is associated / related with IP address via the NSE.

Applicants submit that the cited sections of Balazinski refer to two different solutions. The first solution, as disclosed in the first citation, i.e., Col. 4, line 63 of Balazinski, is made to prior art as disclosed by Balazinski and discloses that one of the primary functions of the **existing NS-SNS sublayer 15** is (2)Providing NS Virtual Circuits between peer NSEs. Applicants note that this section of Balazinski is referring to figure 2. According to the associated description of figure 2, specifically, Col. 3, lines 5-7, figure 2 (**Prior Art**) is a functional block diagram showing the Frame-Relay based Gb interface. The second reference cited in the Response to Arguments section, i.e., Col. 5 lines 46-47, refers to **Balazinski's invention**. Specifically, this section discloses that "the invention carries the BVCI and NSEI over one single UDP port." In Balazinski's invention, NSEI is associated/related with the UDP (or vice versa), but it is not associated with NS-VC. Although the Office Action alleges that Balazinski discloses that the NS-VC is *associated/related with a UDP port via the NSE,* Balazinski explicitly teaches in

Col. 5, lines 50-51, that "**in the present invention**, the existing NS-NSC sub-layer 16 and **the existing NS-SNS sub-layer 15 are replaced by** an NS'-NSC sub- layer 40 and **an NS'-SNS sub-layer 39.**" That is, the NS-SNS sublayer of the Frame Relay based Gb interface is replaced by an NS'-SNS according to Balazinski's invention. Furthermore, Balazinski teaches in Col. 6, lines 29-38, that "the functions of **the NS'-SNS sub-layer 39** are: (1) Providing access to the IP network using a UDP port and an IP address. (2) Multiplexing of NS' PDUs to the right NSE using the NSEI. (3) Providing the ability to use Differentiated Services in order to give priority to one data stream over another. (4) Indicating the availability/unavailability of the IP stack." The invention, as disclosed in Balazinski, is totally silent on NS-VCs when referring to NS'-SNS sublayer. That is because virtual circuits are not used with IP based Gb interface according to Balazinski. See at least Col. 6, line 55 of Balazinski. Thus, Applicants submit that the Office Action is misinterpreting the teaching of Balazinski in the Response to Arguments section. Applicant also submits that Balazinski and the present invention clearly differ from each others. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §102(e) should be withdrawn because Balazinski fails to teach or suggest each feature of claims 1, 25 and 27.

Claims 2 and 5-13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Balazinski in view of the admitted prior art of WO 99/16266 (Forslow). According to the Office Action, Balazinski teaches all of the elements of claims 2 and 5-13 except for explicitly showing the method of communication as recited in claim 1, wherein the

UDP port is identified as either for real-time or non-real-time services. Therefore, the Office Action combined the teaching of Balazinski and Forslow to yield all of the elements of claims 2 and 5-13. The rejection is traversed as being based on references that neither teach nor suggest the novel combination of features clearly recited in independent claim 1.

Claims 2 and 5-13 depend on claim 1 and thus incorporate all of the elements of claim 1. Forslow does not cure the deficiencies of Balazinski, as outlined above. Applicants submit that there is no discussion or suggestion in Forslow of encapsulating a data packet with a UDP and IP, wherein the UDP comprises a UDP port associated with a Network Service-Virtual Connection and the IP provides an IP address associated with a Network Service Entity, as recited in claim 1. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Balazinski nor Forslow, whether taken singly or combined, teaches or suggests each feature of claim 1 and hence, dependent claims 2 and 5-13 thereon.

Claim 3 was rejected under 35 U.S.C. 103(a) as being unpatentable over Balazinski in view of U.S Patent No. 6,636,502 to (Lager). According to the Office Action, Balazinski teaches all of the elements of claim 3 except for explicitly showing the method of communication as recited in claim 1, wherein the data packet is associated with a Temporary Logical Link Identifier (TLLI) and a Network Service Access Point Identifier (NSAPI). Therefore, the Office Action combined the teaching of Balazinski and Lager to yield all of the elements of claim 3. The rejection is traversed as being

based on references that neither teach nor suggest the novel combination of features clearly recited in independent claim 1.

Claim 3 is also dependent on claim 1 and thus incorporates all of the elements of claim 1. Lager does not cure the deficiencies of Balazinski, as outlined above. Applicants submit that there is no discussion or suggestion in Lager of encapsulating a data packet with a UDP and IP, wherein the UDP comprises a UDP port associated with a Network Service-Virtual Connection and the IP provides an IP address associated with a Network Service Entity, as recited in claim 1. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Balazinski nor Lager, whether taken singly or combined, teaches or suggests each feature of claim 1 and hence, dependent claim 3.

Claims 24, 26 and 28 were rejected under 35 U.S.C. 103(a) as being unpatentable over Balazinski in view of U.S Patent No. 6,952,728 to Alles. According to the Office Action, Balazinski teaches all of the elements of claims 24, 26 and 28 except for explicitly showing that the UDP port includes source and destination UDP ports associated with the NS-VC and the IP provides a sources and destination IP address associated with the NSE. Therefore, the Office Action combined the teaching of Balazinski and Alles to yield all of the elements of claims 24, 26 and 28. The rejection is traversed as being based on references that neither teach nor suggest the novel combination of features clearly recited in independent claims 1, 25 and 27.

Alles teaches an Internet service node that enables the provision of desired service policies to each subscriber. The node may include multiple processor groups, with each subscriber being assigned to a processor group. The assigned processor group may be configured with the processing rules, which provide the service policies desired, by the subscriber. See at least the Abstract.

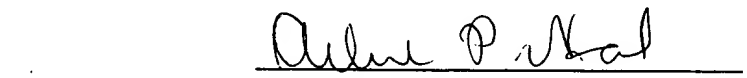
Claim 24 also depends on claim 1 and thus incorporates all of the elements of claim 1. Claim 26 depends on claim 25 and thus incorporates all of the elements of claim 25 and claim 28 depends on claim 27 and thus incorporates all of the elements of claim 27. Alles does not cure the deficiencies of Balazinski. There does not seem to be any discussion or suggestion in Alles of encapsulating a data packet with a User Datagram Protocol (UDP) and an Internet Protocol (IP), wherein the UDP includes a UDP port associated with a Network Service Virtual Connection (NS-VC) and, the IP provides an IP address associated with a Network Service Entity (NSE) as recited in claims 1, 25 and 27. Therefore, Applicant requests that the rejection under 35 U.S.C. §103(a) be withdrawn because neither Balazinski nor Alles, whether taken singly or combined, teaches or suggests each feature of claims 1, 25 and 27 and hence, dependent claim 24, 26 and 28 thereon.

As noted previously, claims 1-13 and 24-28 recite subject matter which is neither disclosed nor suggested in the prior art references cited in the Office Action. It is therefore respectfully requested that all of claims 1-13 and 24-28 be allowed and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



Arlene P. Neal
Registration No. 43,828

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Tysons Corner, Virginia 22182-2700
Telephone: 703-720-7800
Fax: 703-720-7802

APN:kmp

Enclosures: Petition for a One-Month Extension of Time (1)
Check No. 14760